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ABSTRACT

This material includes student guide sheets, reference material, and tape script for the audio-tutorial unit on Cultural Systems. An audio tape is used with the materials. The material is designed for use with Connecticut schools, but can be adapted to other localities. The materials in this unit consider components of cultural systems, land use categories, impact of cultural systems on land use, and community and regional planning. (RH)

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ULTURAL SYSTEMS

SE 021 877

CULTURAL SYSTEMS

and

LAND USE DECISION MAKING

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GUIDE SHEET # 1

OBJECTIVES

"Standing at its mouth
look up its sparkling stream to its source,

a silver cascade which falls all the way
from the mountains to the sea,

and behold a city
on each
successive
plateau...

When at length it has escaped
from under the last of the factories,
it has a level and unmolested passage to the sea,
a mere waste water as it were, bearing little with it
but its fame."

Thoreau, 1839

Henry David Thoreau's words are an apt introduction to the unit on Cultural Systems. Cultural Systems are the interrelations of various aspects of man's modification of the landscape. At times, as Thoreau describes, the modification of the landscape can lead to pollution. However, not all modifications lead to negative impact. The availability of energy and transportation surely play an important role in our civilization. This unit is designed to present information on the impact of cultural systems on land use considerations. More specifically, at the conclusion of the unit on Cultural Systems, you should be able to:

1. Identify the components of the cultural system in your community.
2. Classify specific land uses into generalized land use categories.
3. Describe the importance of ownership patterns in planning for future growth.
4. Recognize the impact of transportation systems on land use.
5. Recognize the potential impact of utility (sewer, water supply, etc) expansion on land use.
6. Describe the relationship between energy consumption and alternative land use patterns.
7. Describe a visual analysis.
8. Identify the components of a scenic quality and cultural edge analysis.
9. Develop the questions for a regional context analysis for your community.
10. Compare and contrast the planning process in your community to models from Idaho and Arietta, New York.

To begin this unit, place the cassette tape for Cultural Systems part I in the tape recorder. Start the recorder and turn to Guide Sheet #2.

As you proceed through this unit, feel free to stop the recorder and study guide sheets that require addition time for analysis and interpretation. We know that you will find information in this unit to be of great value in understanding the importance of cultural systems.

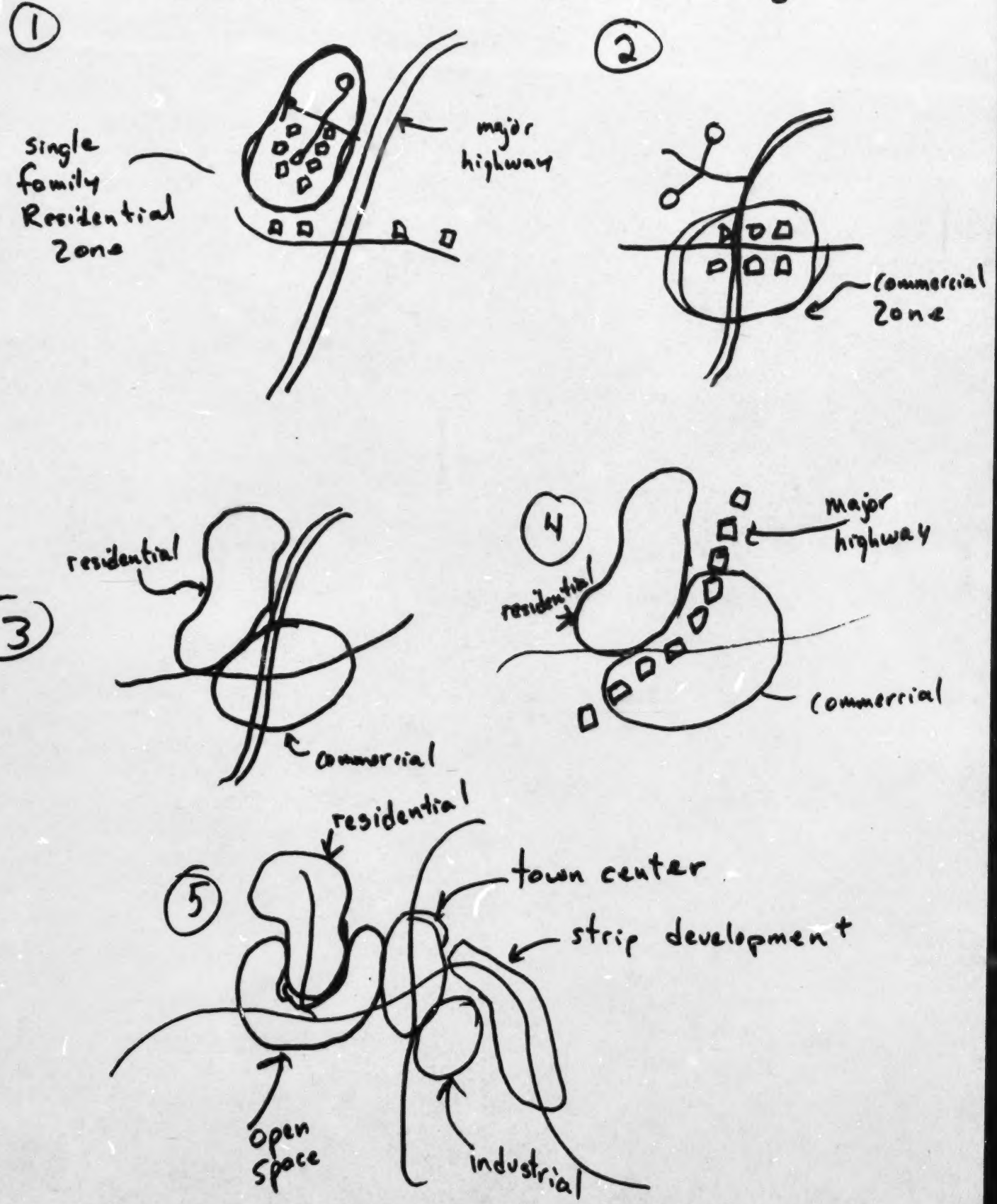
GUIDE SHEET #2

LAND USES

SPECIFIC LAND USES	GENERAL LAND USE CATEGORIES
Bicycle riding	Residential-low density one acre or more per dwelling
barber shop	
golf course	
city hall	
drug store	
police station	
steel mill	
elementary school	
printers	
bus station	
shopping center	
sewage treatment plant	
movie theater	
YMCA	
train station	
airport	
state park	
junk yard	
abandoned lot	
supermarket	
bank	
1 acre housing development	Residential-medium density ½ to 1 acre per dwelling
high rise apartment	Residential-high density less than ½ acre per dwelling
office building	
state park	
baseball field	
restaurant	Commercial-Trade Local Regional
highway	
¼ acre subdivision	
gas station	
bottling plant	Industrial
cemetary	Transportation and / or Utilities
	Institutional
	Resource Production and Extraction
	Recreation, Cultural and Entertainment
	Agriculture and/or Forest
	Plantation
	Woodland, open land, and wet land
	Undeveloped Land
	Water Area

GUIDE SHEET #3

GRAPHICS: Examples of Bubble-Diagrams



GUIDE SHEET #4

COLOR CODES FOR LAND USE MAPS

Make a Xerox Copy of guidesheet #4. Color the land use types with appropriate colors to form your own land use map. After you finish this unit, visit your town hall to see the land use map for your community.

Color Code:

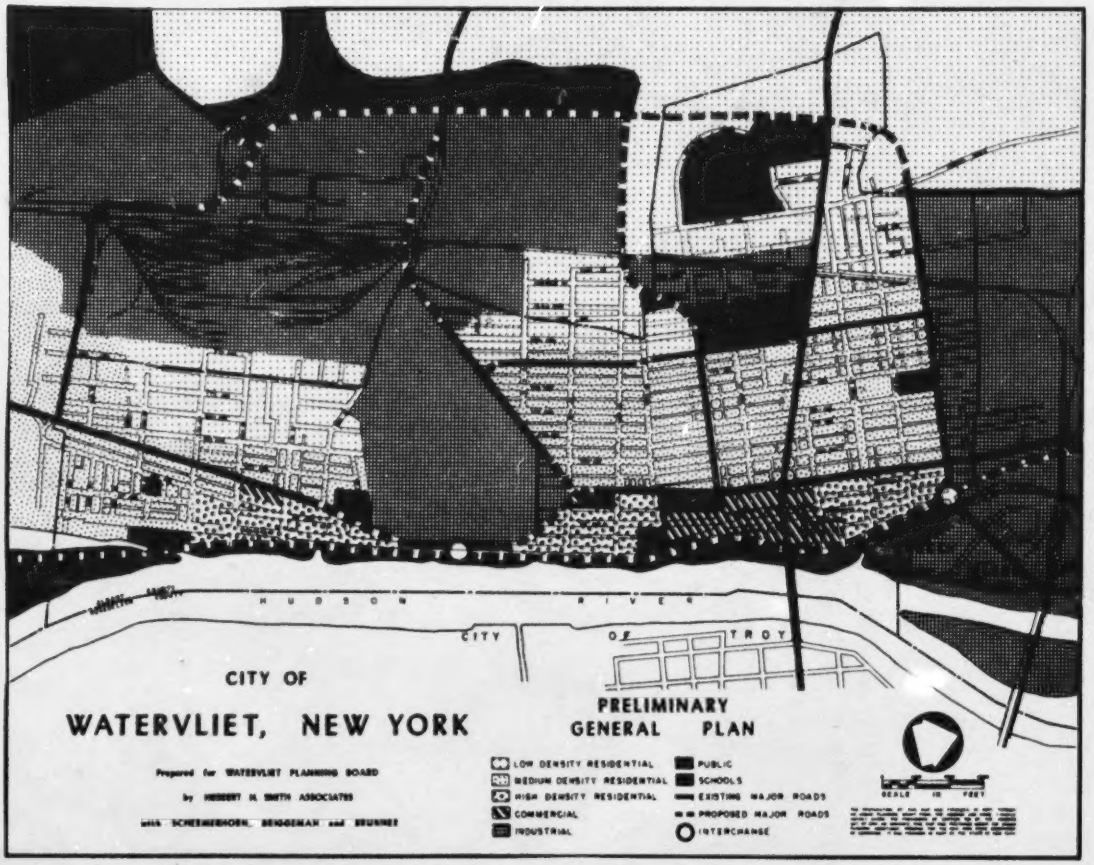
Residential - orange - high density dark orange - medium density orange
low density - light orange

Commercial-red

Industrial-Red

Institution - black

Recreation - green



Guide Sheet # 5

Town of Upland - Assessor's Book

Item number	Name of owner home address	Location of property street address	Category 1 house	Category 2 outbuilding	Category 3 lot	Category 4 misc.	Net
1	John Perkins 23 Main St. Upland, Ct 06531	23 Main St. Upland	$16,000	$2,000	¼ acre	____	$18,000
2	Jason Richards 45 State St. Centerville, Ct. 06318	72 Main St. Upland	none	none	75 acres	____	$25,000
3	Mary Finley 89 Main St. Upland, Ct 06531	89 Main St Upland	$22,000	none	½ acre	swimming pool	$30,000
4	Robert Johnson 108 Main St. Upland, Ct. 06531	108 Main St.	$14,000	$1,500	½ acre	____	$15,500
5	Janet Apple 46 Wayside Terrace Downtown, Ct 06895	141 Main St.	$30,000	____	1 acre	____	$30,000

GUIDE SHEET #6

SOCIAL AND ECONOMIC EFFECTS OF HIGHWAYS

These findings highlight the results of highway impact studies.

PEOPLE DISPLACED FROM RIGHT-OF-WAY

Residents displaced from highway right-of-way often improve their housing situation, using both their own funds and highway relocation payments. Owners typically relocate as owners. Many tenants relocate as owners.
Resident satisfaction with relocation appears to increase over a period of time. The principal complaint is that highway payments are late.

PROXIMITY EFFECTS

Highway effects on residences are reflected in property values. Residences abutting highways typically experience accessibility advantages which are partly offset by proximity disadvantages (noise, air, pedestrian safety.)
Schools, hospitals, and churches often benefit from highway accessibility and visibility. Whether these advantages justify locating these sensitive activities near highways depends on (1) how large an area is served, (2) whether visibility can be provided without noise or other problems, (3) the importance of pedestrian access, etc.

COMMUNITY EFFECTS

Right-of-way acquisition can lower tax rolls initially or even over a period of time if the jurisdiction is very small. Typically,such initial effects are offset by development or redevelopment near the highway.

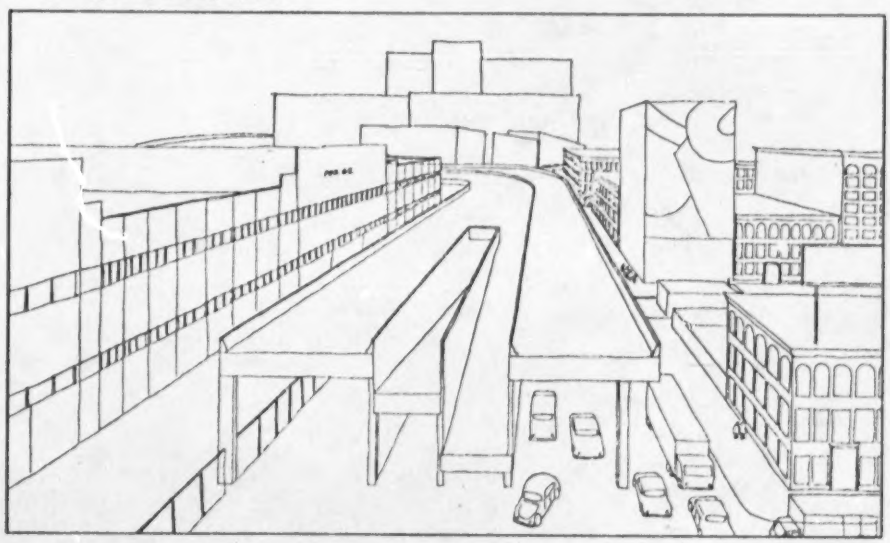
ACCESSIBILITY EFFECTS

Accessibility advantages of highways are often demonstrated in development patterns of areas with and without highways. For example, counties, cities, or portion of cities affected by highways have often experienced more industrial development than comparable areas without highway improvements.
Highway bypass or traffic relief routes typically ease traffic downtown and assist general business in bypassed towns. Bypassed traffic-serving businesses, particularly in small towns, may be harmed.
Belt highways appear to have benefited fringe areas without harming central city locations. Metropolitan areas with beltways have central cities that equal or exceed central cities of comparable metropolitan areas in population, employment, retail trade, and office space growth.
Accessibility advantages of highways, like the disadvantages of highway proximity, are at least partially capitalized in the values of affected properties.

LAND USE

Land use planning near highways, particularly near interchanges, has been so poor that disadvantages to the highway have resulted. Appropriate uses could have avoided these problems.
Efforts to avoid land use and highway conflicts include highway design solutions, and special land use considerations in impact zones. Joint development outside the right-of-way offers some hope but also raises problems (e.g., of costs of acquiring land and administering it.)

Source: Social and Economic Effects of Highways. U.S. Department of Transportation, Federal Highway Administration, Washington, D.C., 1974



GUIDE SHEET #7

QUESTION #1: IN WHAT WAYS CAN THE INTRODUCTION OF A MUNICIPAL INTERCEPTOR SEWAGE SYSTEM INFLUENCE THE PATTERN OF DEVELOPMENT?

The *location*, *timing*, and *capacity* of sewer and water lines can influence the *rate*, *type*, *location*, and *density* of shoreline development. Until municipal water and sewage lines are provided, the location, density and type of shoreline development will, to a great extent, be limited by the ability of the soil to support efficient septic systems. If the soil is of the wrong type, the slope of the land too steep, or the ground water table too high, a septic system will not properly function. If health and building codes are properly enforced, then development cannot occur where a septic system might contaminate the surface or ground water.

location: Using septic systems, development will take on a natural locational pattern determined by the capacities of the land to absorb liquid waste.

density: Each septic tank requires a certain discharge area, depending upon the conditions of the area in which it is to be located. A certain separation between buildings or between discharge fields must be provided; with a septic system it would be impossible to have densities such as those found in Detroit.

type: Existent septic systems can safely treat only a certain amount of sewage. While new technology in this area may soon alter design limitations, septic tanks tend to be unsuitable for high flow rates or for prolonged surges, such as might be generated by a hotel or some industries.

When sewage and water lines are provided, the restrictions of the natural shorelands diminish in their effect upon patterns of development. With the natural limitations of slope, ground water level and soil type eliminated new kinds of development can occur, in new locations. A shoreline that might have been capable of supporting only a limited number of single family homes set back 100 feet from the water's edge might suddenly be able to support industry, clustered residential developments, and major commercial projects, without the need for a 100-foot barrier. In fact, sewage and water lines might make development feasable on or in the water: a pattern just not possible with septic systems.

location: Development can occur wherever sewage and water lines are available, so long as the ground is able to support the proposed structure. Land, once undeveloped because it was inappropriate for septic systems, now is available for development, if sewage and water lines are present.

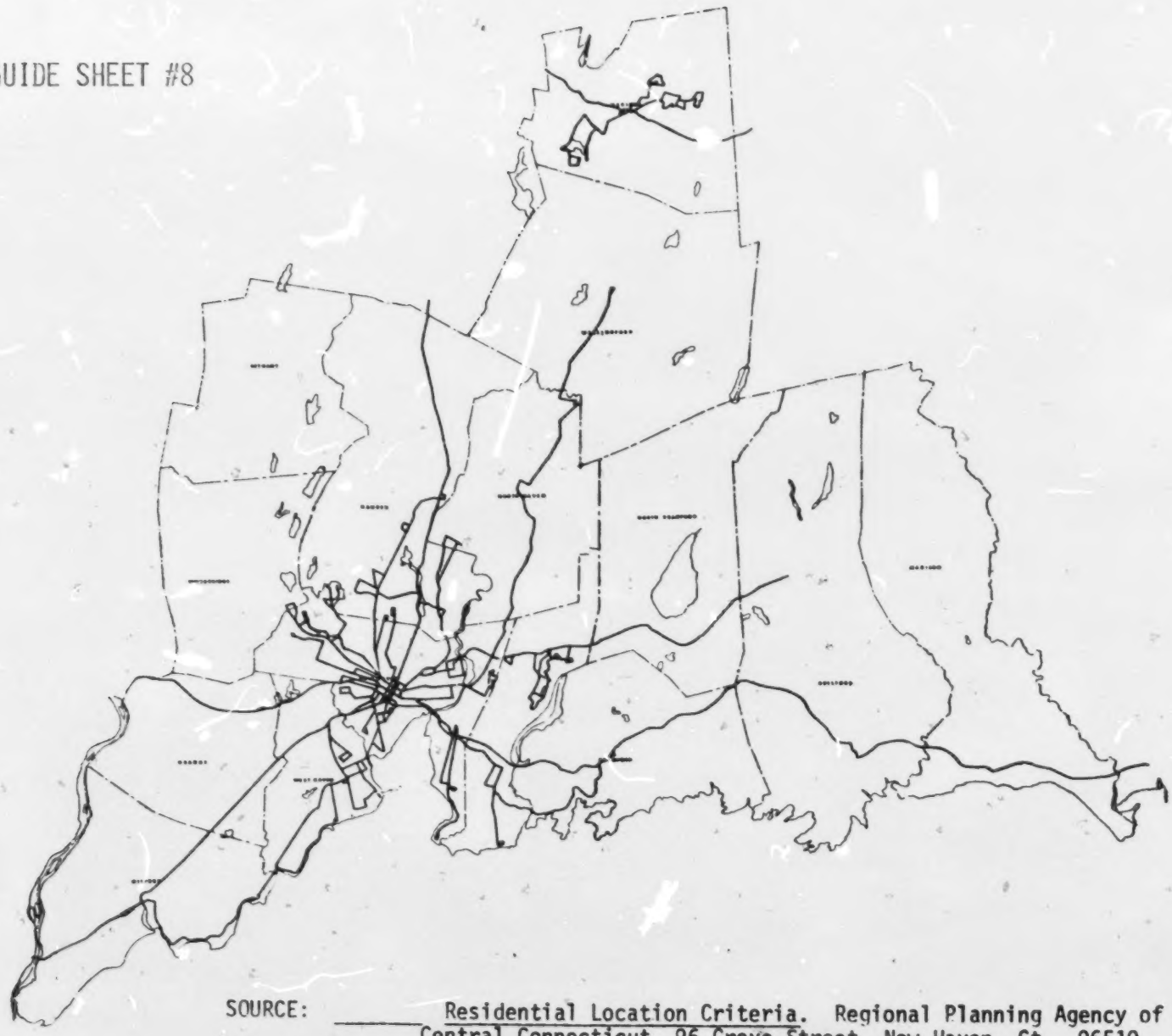
density & type: A rural shoreland community could conceivably construct one or more systems capable of treating the sewage of a city the size of New York or Detroit. A mile stretch of shoreline, that with septic systems can support only 10 or 15 single family homes could, with the presence of a high capacity sewage and water system, support almost any amount of development, from shopping centers to apartment complexes.

rate: If the areas within the community capable of supporting septic fields are already occupied, then further development will occur only slowly, if at all. But, when sewer and water lines are available, development can occur as fast as access to these lines can be obtained.

Source: Ryner, Peter C. "Sewers and Shoreland Development" Planning Information Bulletin No. 1. Coastal Zone Laboratory, Great Lakes Resource Management Program, University of Michigan. January, 1974.

BUS SERVICE

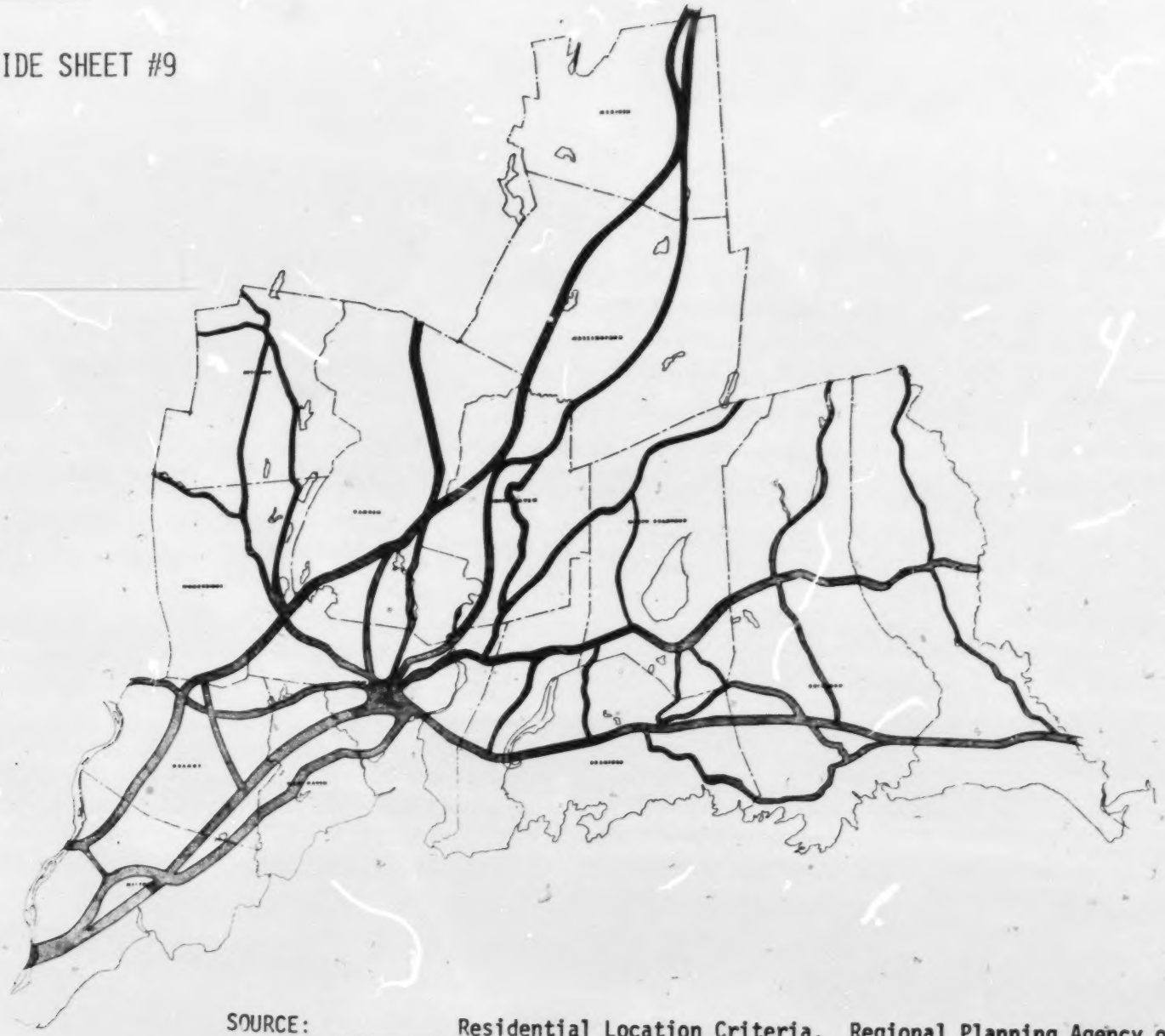
GUIDE SHEET #8



SOURCE: Residential Location Criteria. Regional Planning Agency of South Central Connecticut, 96 Grove Street, New Haven, Ct. 06510. July, 1971.

HIGHWAYS

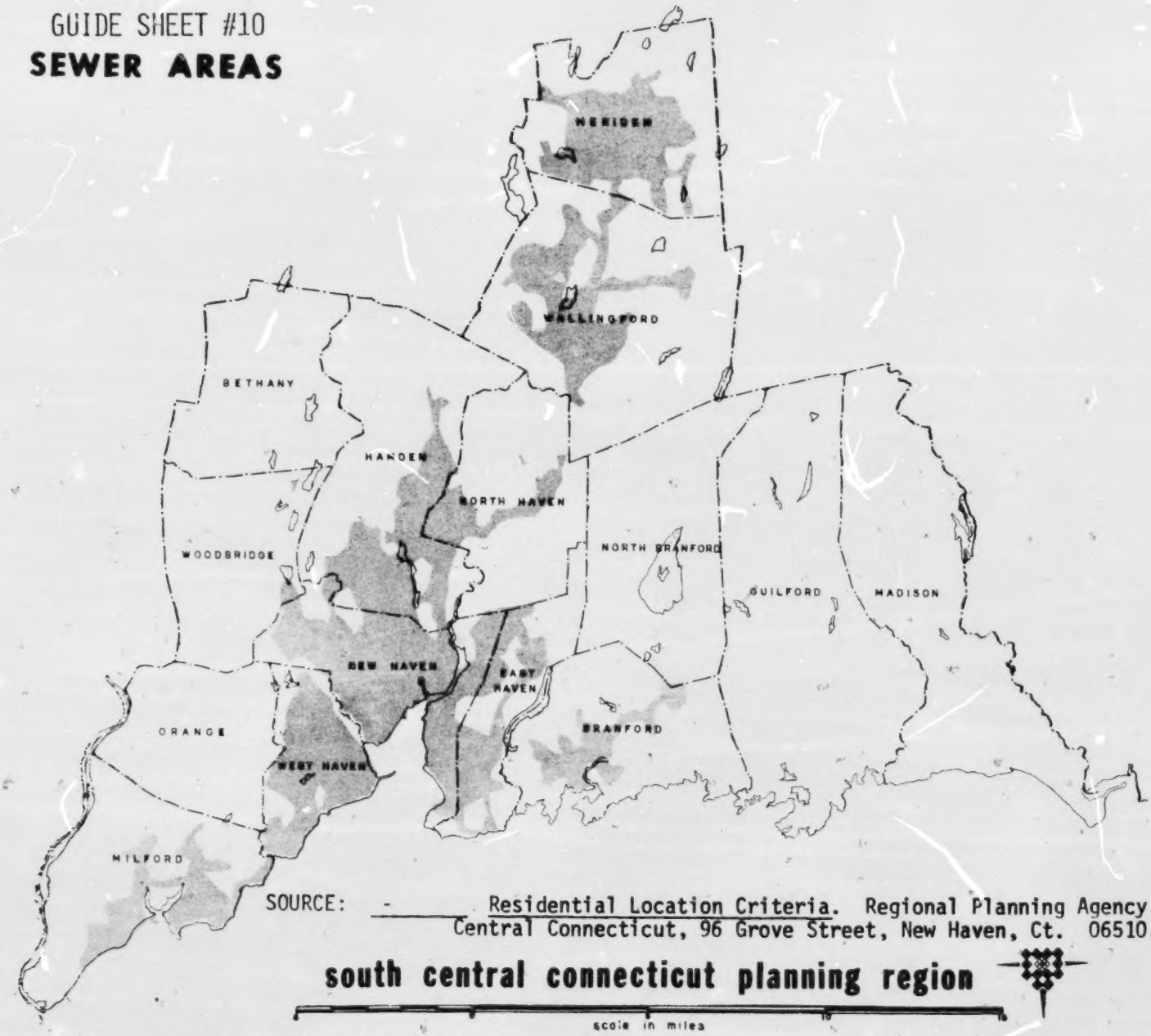
GUIDE SHEET #9



SOURCE: _____ Residential Location Criteria. Regional Planning Agency of South Central Connecticut, 96 Grove Street, New Haven, Ct. 06510. July, 1971

GUIDE SHEET #10

SEWER AREAS



SOURCE: Residential Location Criteria. Regional Planning Agency of South Central Connecticut, 96 Grove Street, New Haven, Ct. 06510. July, 1971

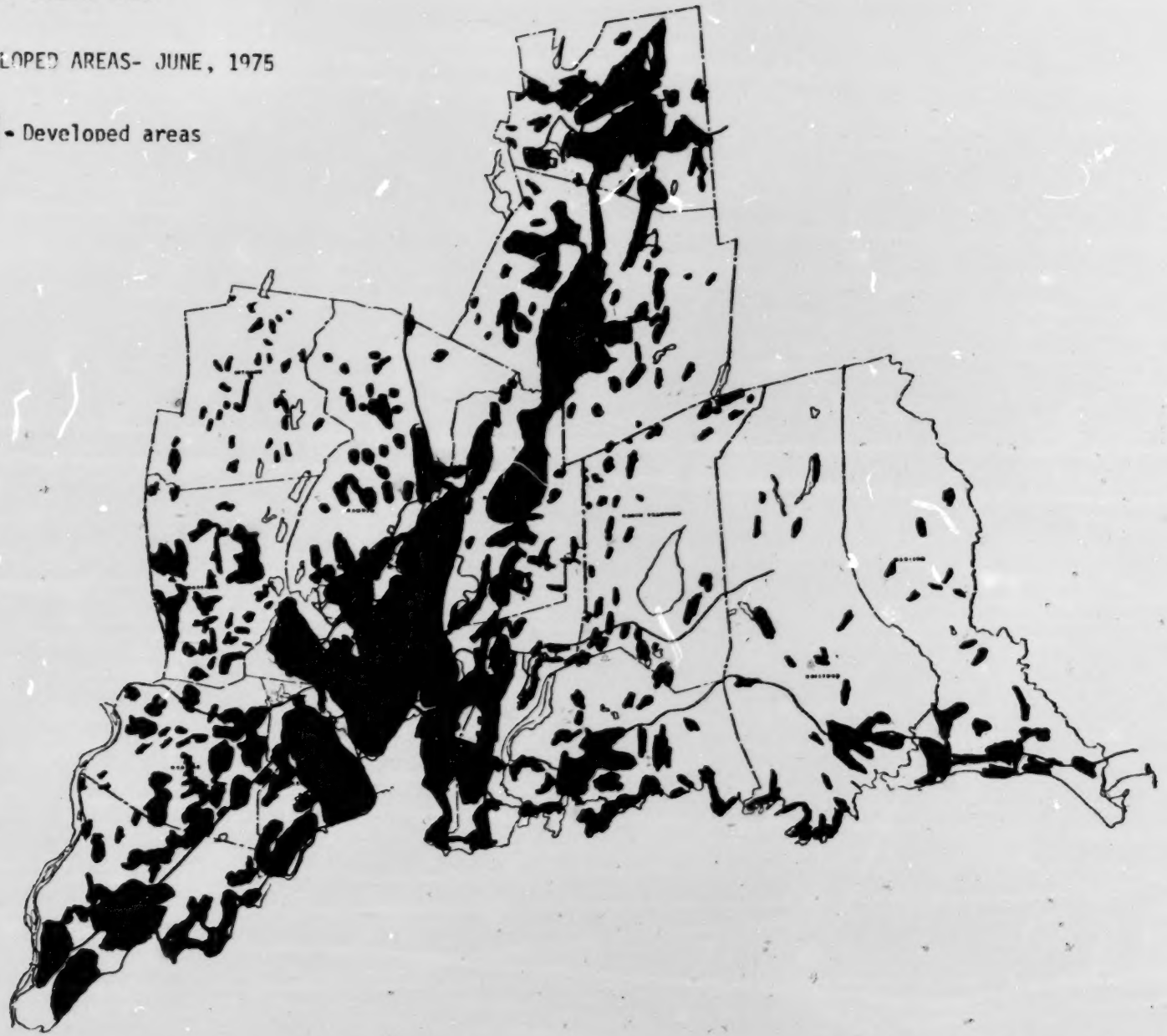
south central connecticut planning region

scale in miles

GUIDE SHEET #11

DEVELOPED AREAS- JUNE, 1975

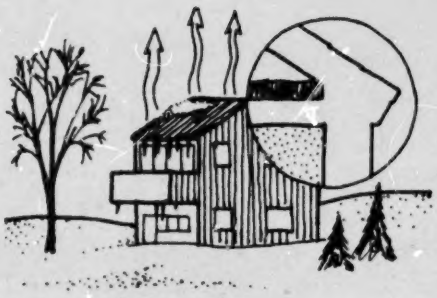
■ - Developed areas



GUIDE SHEET #12

Further considerations

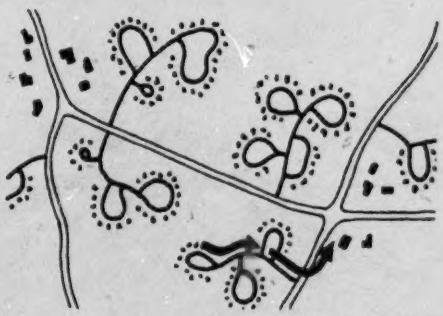
Energy conservation, utilities

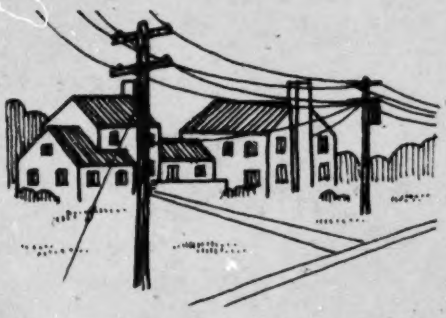


Increasing insulation in walls and ceilings can substantially reduce heating costs regardless of the type of heating system used. Increasing insulation in walls from 0 to 4 inches and in ceilings from 3 to 6 inches can lower heat loss on a cold day by roughly 30 percent. Reducing air leaks around doors and windows also reduces heat loss.

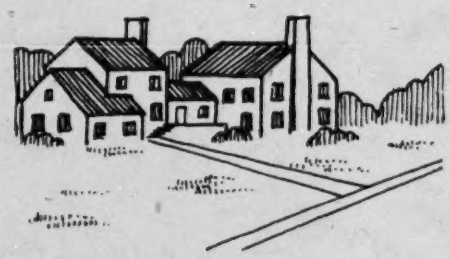
The location and exposure of buildings can have a major effect on energy consumption. Houses on exposed, windy sites will require more energy to heat than buildings in more sheltered areas. Large windows on shady northern walls will increase winter heat loss. Roof overhang on south-facing walls with large windows can be designed so that sunlight enters the house in the winter and is largely blocked in the summer.

Widely dispersed residential development causes energy to be wasted in frequent and lengthy automobile trips. Increasing density of development and locating subdivisions, schools, shopping areas and employment centers near each other reduces gasoline consumption and makes possible the use of alternative forms of transportation.





Utility poles and overhead wires create a cluttered effect and are susceptible to damage in storms. Installation of utilities can be timed to coincide with road-building operations so that expense and disruption of installing equipment underground are minimized.



SOURCE: Carroll, Allen. Developer's Handbook. Connecticut Department of Environmental Protection, Coastal Area Management Program, 1975.

GUIDE SHEET #13

A. Dense Center
This scenario assumes that all added households and employment will be concentrated in the metropolitan center, with somewhat higher density residential development.

B. Transit-Oriented
The emphasis in this scenario is on the planned METRO system, with all new households and employment located in areas where planned stops on the rapid rail system are located. Densities are moderately higher.

C. Wedges and Corridors
The prevailing plan for development in the metropolitan Washington area calls for emphasis on radial transportation routes from the metropolitan center, and development in those corridors; wedges of open land without development would be reserved between corridors. This alternative reflects that plan.

D. Beltway-Oriented
Since much of the recent growth in metropolitan Washington has been focused on the Capital Beltway, a circumurban expressway that rings the metropolitan center, this alternative extrapolates that trend. All added households and employment are concentrated in vacant areas adjacent to the Beltway.

E. Sprawl
In this scenario, the increment of households is assumed to locate beyond the Beltway in low density, largely single-family units; employment on the other hand is concentrated in the metropolitan center (office uses) or around the Beltway (retail uses).

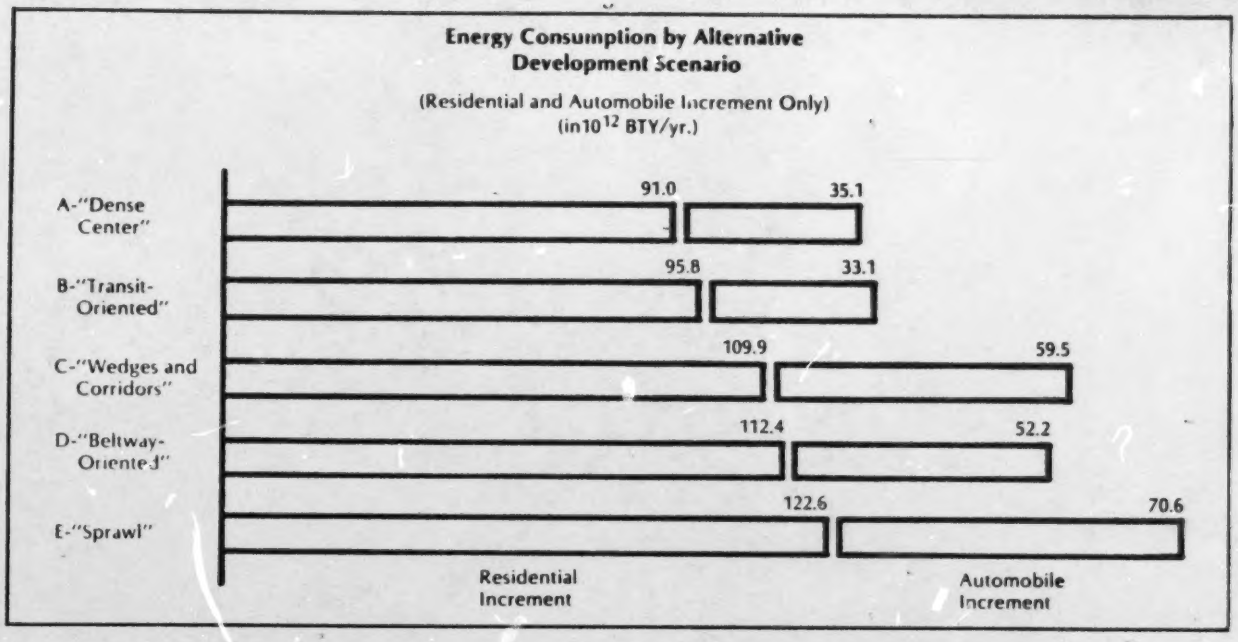
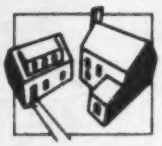


Table 3
Energy Consumption By Alternative Development Scenarios (In 10^{12} Btu/Yr.)

	Base	A "Dense Center"	B "Transit-Oriented"	C "Wedges and Corridors"	D "Beltway-Oriented"	E "Sprawl"
Consumption by Sector						
Residential	265.3					
Increment		91.0	95.8	109.9	112.4	122.6
Total, Forecast Year		356.3	361.1	375.2	377.7	387.9
Commercial/Industrial/ Institutional	176.6					
Increment		78.9	78.9	78.9	78.9	78.9
Total, Forecast Year		255.5	255.5	255.5	255.5	255.5
Transportation, Automobile	117.9					
Increment		35.1	33.1	59.5	52.2	70.6
Total, Forecast Year		153.0	151.0	177.4	170.1	188.5
Transportation, METRO	2.5					
Increment		12.4	12.4	12.4	12.4	12.4
Total, Forecast Year		14.9	14.9	14.9	14.9	14.9
Total	562.3					
Increment		217.4	220.2	260.7	255.9	284.5
Total, Forecast Year		779.7	782.5	823.0	818.2	846.8

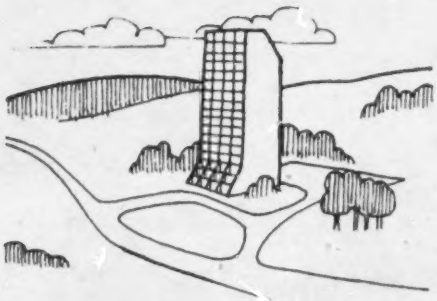
Source: Real Estate Research Corporation

SOURCE: Roberts, James S. "Energy and Land Use: Analysis of Alternative Development Patterns," Environmental Comment. Urban Land Institute, September, 1975.

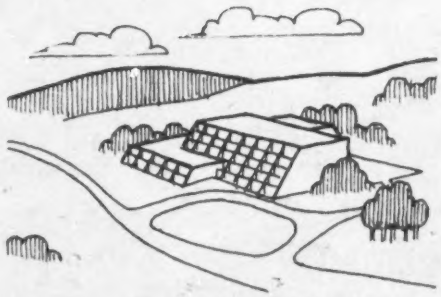


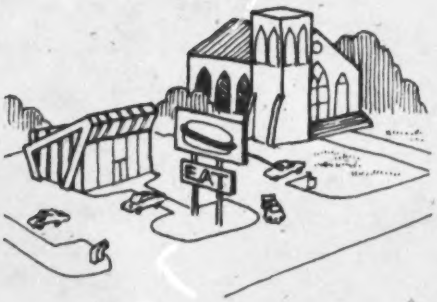
Further considerations

Harmonizing with the landscape

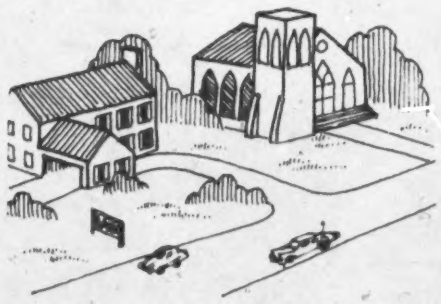


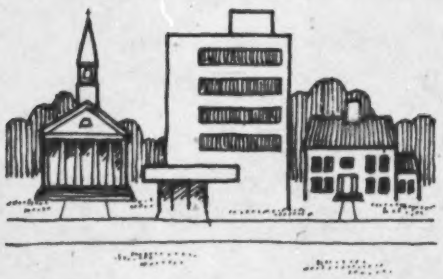
Buildings should be designed to blend with their natural surroundings rather than spoil them. Instead of ignoring or dominating the landscape, large structures should harmonize with the natural features of the area. Use of appropriate building materials and skillful landscaping will make new buildings less obtrusive.





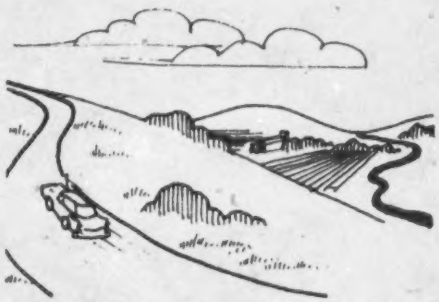
The use of a site should be compatible with other land use in the area. A commercial development that could be an asset in the right location may be a nuisance and an eyesore if improperly sited.





Improper scale and architectural style of buildings can visually spoil an entire street. The height, use of building materials, setback from the street, and landscaping of new buildings should harmonize with neighboring structures. Buildings should not "compete" with nearby visual attractions such as churches and historic houses.

Buildings, signs, and parking areas should not block vistas from roads and other public areas. Pleasing views can be maintained by placing utilities underground, landscaping to prevent vegetation from obscuring the view, and locating buildings below or to one side of the line of sight.



SOURCE: Carroll, Allen. Developer's Handbook. Connecticut Department of Environmental Protection, Coastal Area Management Program, 1975.

GUIDE SHEET #15

DESIGN AND AESTHETICS RATING SCALE

RATING SCALE

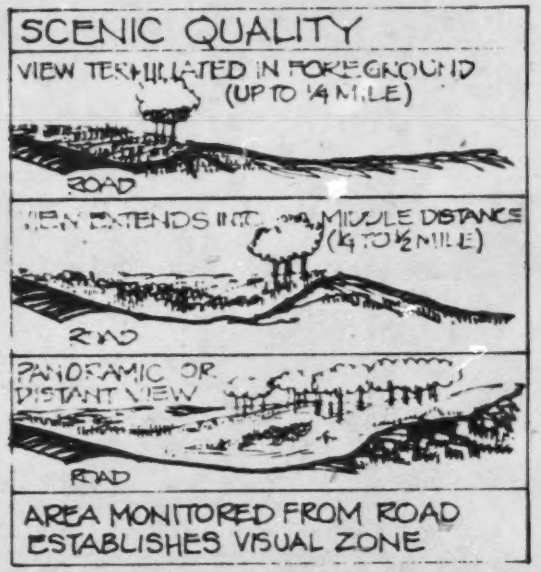
Characteristic		RATING SCALE	
attractiveness	attractive	VERY SLIGHTLY NEUTRAL SLIGHTLY VERY ____ _____ _____ _____ ____	ugly
interest	interesting	____ _____ _____ _____ ____	dull
appropriateness	appropriate	____ _____ _____ _____ ____	inappropriate
size (tone)	grand	____ _____ _____ _____ ____	"cozy" "homey" or
available room	spacious	____ _____ _____ _____ ____	cramped or tight
organization	well organized	____ _____ _____ _____ ____	poorly organized
function or use	useful or functional	____ _____ _____ _____ ____	decorative
		Final Rating	
I like it		____ _____ _____ _____ ____	I dislike it

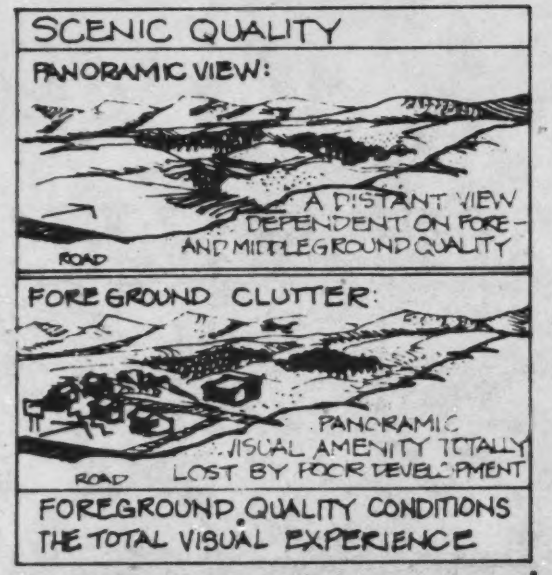
GUIDE SHEET#16

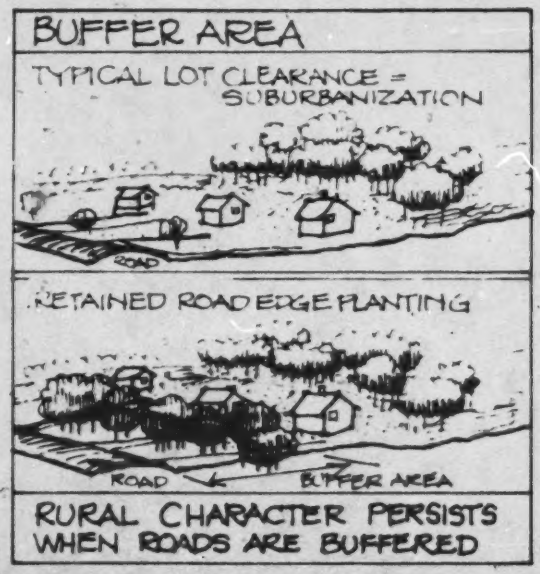
Scenic Quality

SOURCE: Dougherty, J. , M. Everett, and T. A.J. McGowan. A Preservation and Conservation Study / Northwestern Connecticut Regional Planning Area. Northwestern Connecticut Regional Planning Agency, P.O. Box 30, Warren, Ct. 06754.

SCENIC QUALITY/DEFINITION
A VIEW TERMINATED IN FOREGROUND (UP TO ¼MILE)
B. VIEW EXTENDS INTO MIDDLE DISTANCE (¼ TO ½MILE)
C. VIEW IS EXTENSIVE AND USUALLY PANORAMIC (OVER ½ MILE)
AREA MONITORED FROM ROAD ESTABLISHES VISUAL ZONE


SCENIC QUALITY
VIEW TERMINATED IN FOREGROUND (UP TO ¼ MILE)
ROAD
VIEW EXTENDS INTO MIDDLE DISTANCE (¼ TO ½ MILE)
2ND
PANORAMIC OR DISTANT VIEW
ROAD
AREA MONITORED FROM ROAD ESTABLISHES VISUAL ZONE


SCENIC QUALITY
PANORAMIC VIEW:
A DISTANT VIEW DEPENDENT ON FORE- AND MIDDLEGROUND QUALITY
ROAD
FOREGROUND CLUTTER:
PANORAMIC VISUAL AMENITY TOTALLY LOST BY POOR DEVELOPMENT
ROAD
FOREGROUND QUALITY CONDITIONS THE TOTAL VISUAL EXPERIENCE

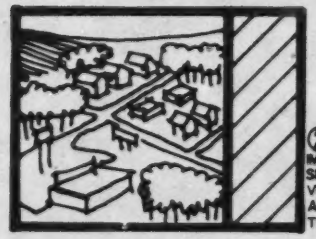


GUIDE SHEET #17

Cultural Edge

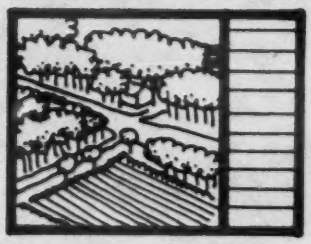
① DEGRADED
MAJOR DISRUPTIONS OF THE LANDSCAPE. STRONG NEGATIVE CONTRAST TO NORM. IMPOSITION OF ALIEN SCALED ELEMENTS. LACK OF VEGETATIVE BUFFERING OR HEALING OF EARTH MOVEMENT SCARS.

④ ABOVE AVERAGE
DOMINANT CONTINUITY WITH PATTERN DIVERSITY AND TOPOGRAPHIC VARIETY SUBORDINATE WATER FEATURES. SECONDARY VISUAL INTEREST.

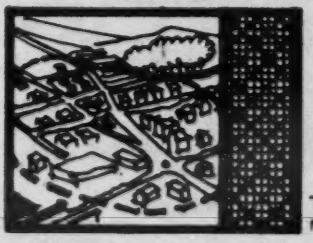


② DISRUPTIVE
IMPOSITION OF NEW PATTERN WITHOUT SENSITIVITY TO NORM, DISRUPTIVE OF VEGETATION, DENSITY AND BUILDING FORMS AND MATERIALS. OBVIOUS MANIPULATION OF ENVIRONMENT.

⑤ DISTINCTIVE
DOMINANT LANDFORMS AND WATERBODIES. SIGNIFICANT, WELL SITED BUILDINGS. HISTORIC HOUSES, MAJOR FARMS. FOCAL OR UNIQUE FEATURES.



③ AVERAGE
NORMATIVE MIX OF CULTURAL AND NATURAL ELEMENTS. MINIMAL DIVERSITY. LITTLE SENSE OF WATER OR OF DOMINANT LANDFORMS.

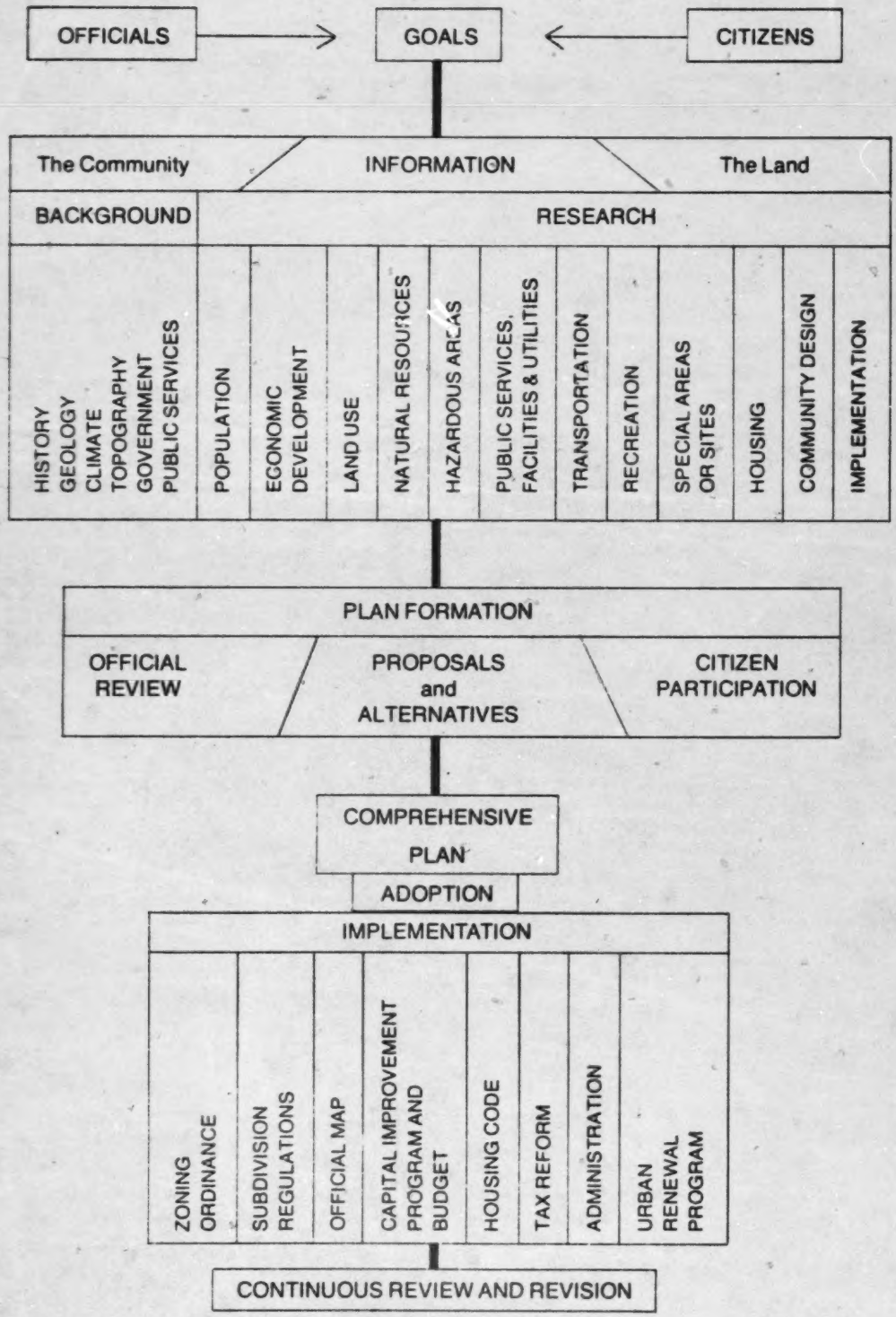


TOWN CENTERS
NON-RATED URBANIZED CORE

SOURCE: Dougherty, J. , M. Everett, and T. A.J. McGowan. A Preservation and conservation Study / Northwestern Connecticut Regional Planning Area. Northwestern Connecticut Regional Planning Agency, P.O. Box 30, Warren, Ct. 06754.

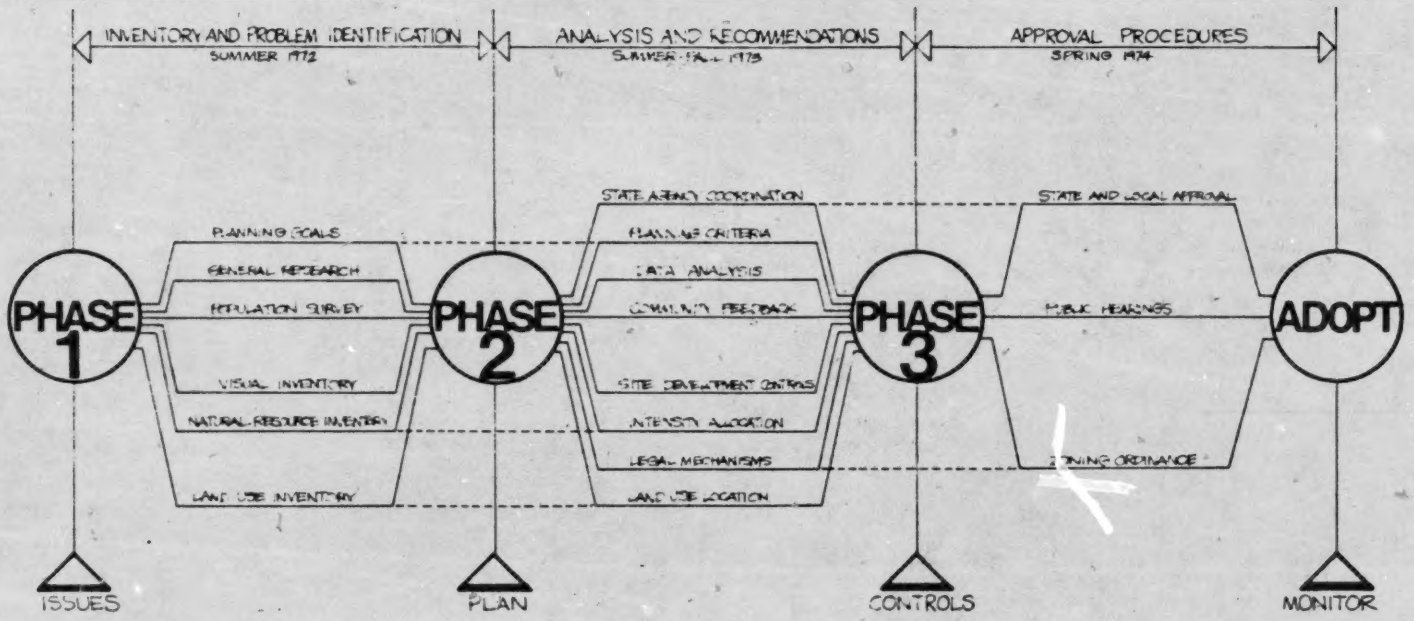
GUIDE SHEET #18

THE PLANNING PROCESS



Source: Parsons, Donna and Jim Roelofs. Future Tense: A workbook for Planning the Use of Land. Regional Studies Center, College of Idaho, Caldwell, Idaho, 1975.

GUIDE SHEET #19



ARIETTA PROCESS

Source: Trancik, R., M. Timmons, and D. K. Ford. Arietta Process. Arrietta Planning Board, Piseco, New York 12108. April, 1974.

WORDS WORTH KNOWING

bubble diagram - a graphic technique utilizing blob-like forms to represent zones of information and their relationships to one another.

context analysis- an analysis of the role a community plays in larger region and the demand the region places on the towns resources.

cultural edge analysis - a survey of the band of land along transportation corridors.

cultural systems - are the interrelationships of the various aspects of man's modification of the landscape. These include historical and settlement patterns, land use, circulation or transportation patterns, energy, and scenic conditions.

harmonious visual character - areas where the parts that make up the visual landscape are not the same but are compatible and fit together to create a cohesive, complete visual image.

holistic - term describing the concept of the inter-relatedness of parts to make up the whole; the whole is a function of its parts.

interceptor sewer - a sewer that receives flow from transverse sewers and conducts the water to treatment plant or disposal point.

land use - any activity that people participate in that requires space.

land use analysis - a study of the existing uses of the land - how is it being used and what are the relationships between the various uses.

land use map - a colored map of a town or region, each color representing a land use category. Patterns of development are easily seen.

scenic quality analysis - an evaluation of the scenic beauty of a township.

utility system - a support facility for a community such as sewers, electric power, gas, or water supply.

visual absorptiveness - the ability as a landscape to accept development without high visual impact; the ability of new development to be hidden in the landscape

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Trancik, R. , M. Timmons, and D. K. Ford. Arietta Process. Arrietta Planning Board, Piseco, New York 12108. April, 1974.

_____ Environmental Quality: The Fifth annual report of The Council on Environmental Quality. December, 1974.

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_____ Social and Economic Effects of Highways. U.S. Department of Transportation, Federal Highway Administration, Washington, D.C., 1974

Audio Tape Script

CULTURAL SYSTEMS

Welcome to the Unit on Cultural Systems. At this moment, you are probably asking yourself, what are cultural systems? (Slow) Cultural systems are the interrelationships of the various aspects of man's modification of the landscape. These include historical and settlement patterns, land use, transportation patterns, and scenic conditions.

Previously, we have discussed the natural systems which direclty influence and often dictate the location of various land uses, but we have not yet adequately discussed what those land uses are.

Planning is done by people, for people. People use the land in various ways. Planning is a process to achieve optimal distribution and allocation of these land uses: optimal meaning best integrated with the land itself and with the surrounding uses of land, with minimal conflict and destruction. We study the natural systems to understand their workings and sensitivities, and their inter-dependent qualities in order to minimize conflict with and destruction of natural systems. To complete the planning process, we will now study man's cultural systems, their structure and inter-relationships. It should be stressed here that present conditions can and should serve as a guide for the future...in other words we cannot adequately evaluate any projected plans for the future without understanding the existing condition and it's successes or failures. Therefore, we will begin by talking about the things that one should include in a "Land use analysis" of existing conditions to help develop a "Land use plan" for the future.

Before we procede further, it is important that we have an understanding of what the term land use means. What is considered to be a land use? Well, just about any activity that people participate in that requires space constitutes a land use. Turn to guide sheet #2. Look at the left column--here you can get an idea of the wide range of activities that are included. (Pause) However, with a discerning eye, we can begin to see that many of these are similar or related activities and fall into more general land use categories. The general categories are listed in the right column opposite the land use list. See if you can match up the use with its more general categories. There are probably many more uses in your town which are not on our list. Add them to our list and continue to match them up with a corresponding general land use category. Stop the recorder while you work.

The purpose of using general land use categories is to facilitate working with the diverse number of activities that exist. These categories are widely accepted and used by planners doing land use studies. These categories also have an associated standard color to represent them on a map so that when each use is colored in, the patterns of land use in a town are easily read. Perhaps you have seen one of these maps. If you haven't seen one, you can make one of your own on guide sheet #3. Here on guide sheet #3, is a simple, fabricated town plan. The numbers represent the same general land use categories as before and each should be colored with its appropriate color. These colors represent the accepted color convention so that when you see one of these maps in a presentation, most likely the same colors will represent these same land uses. If you would like to complete guide sheet #3 now,

Stop the recorder until you are ready to continue.

Lets concentrate a bit more on the recording of the information. As you begin to undertake a land use study of your town or of a parcel of land being considered for development, you will find it very helpful, if you record your thoughts and ideas, as they come up. Trying to keep all of the information that you discover in your head is a difficult task. But if you learn to <u>think</u> with your pencil, you can keep your data well organized and easily available.

You do not have to be an artist to draw or to take notes. The information you are recording is to be used for reference for <u>you</u>. It is not to be put on display. You don't have to worry about what it looks like as long as its understandable and says what you want it to say. The only way to overcome the self-consciousness that most people feel about drawing is to practice drawing. You should not be intimidated by the pencil or pen. They are instruments to serve you; they certainly won't do you any harm.

A very basic graphic technique that is easy to use and records the kinds of information that we will be dealing with is called the "Bubble Diagram". Refer to guide sheet #4 as we talk about bubble diagrams. (Pause).

Bubble diagrams are simply drawings that use bubbles or blob-like forms to indicate areas of similiar characteristics and the relationships between these areas. A zone consisting of similiar parts is enclosed by a bubble. For example, a neighborhood that is made up of two-story homes, each occupied by only one family, can be circled by a bubble and called a single-family residential area. Then there is an area nearby consisting of all types of stores and shops that sell goods and commodities. This area can be enclosed by a bubble and is called a commercial zone. Now we have two types of land use zones. Their relationship to one another is easily seen by looking at the bubbles and seeing how they fit together: Look at the bubble in part 3, guide sheet #4. Are the bubbles far apart indicating a weak link or are they adjacent, almost interlocked, showing a close, perhaps mutually dependent relationship? (Pause) We draw bubbles rather than precise, geometric configurations because they are much faster to draw and because they do give us a clear idea of the general form of the zone and its relationship to other zones.

We can use arrows, lines and other symbols to help us describe in more detail relationships or other aspects of existing conditions that might provide us with a deeper understanding of a situation. If we represent a major highway with a dashed line, we get an even better picture of what's going on in the area under consideration. From part 4 of guide sheet #4, we can see that the highway provides the primary access to these adjacent zones. Little sketches like these can be extremely helpful in understanding the existing land use conditions in your town. As we discuss the analysis process for existing land uses, try and record some of the relationships and situations that do occur in your town. They will undoubtedly facilitate your decision-making in the future.

Locating the various types of land uses in your town and illustrating a pattern is only the beginning of the analysis. We must now begin to look closely at the pattern to see what it tells us. We must look at the individual pieces of the puzzle and see how they contribute to the whole picture. Just as the vegetation of an area can only be completely understood in relation to the soils, topography, and other natural conditions, a shopping center should be evaluated by its critical components: proximity to its users; easy access by major roads; sufficient land for parking and the overall environmental impact of site development. As the inhabitants and everyday users of a community we each have an implicit understanding of its structure and functional success and therefore have the ability to make a critical evaluation of the community. However, this evaluation is dependent upon the asking of appropriate questions which we will now begin to develop.

Continuing with the natural systems analogy, a town or community has a structure just as an ecosystem has a structure. Just as water transports nutrients and sediments along drainage channels, our roads and highways serve as our life support systems. All of the parts are inter-connected and must be viewed with a "holistic" approach. The viability of a system depends upon these connections. Therefore the questions that we must ask in a land use analysis adhere to this principle of of inter-relatedness.

We begin with the base-land ownership. Land is owned both privately and publicly. It is important to know about ownership patterns as a key to possible development trends. Small towns with well dispersed land holdings probably aren't immediately threatened by any large scale development. However a town with a few major land owners, especially absentee landlords, might one day be presented with a new condominium, Commercial development mobile home, seasonal recreation development, or other large projects that has not been adequately integrated into the structure of the town. Who are the major land holders in your town? Do you know of their land use plans? Is there much government owned land in the area? What does the government intend to do with it's land? Ownership information is public information. It is available usually at the town or county assessor's office. The name of the owner, total square footage or acreage, and the assessed value of the land and the buildings are all listed on the assessors cards. A sample page of an assessor's book is illustrated on guide sheet #5. Stop the recorder to review the guide sheet. This information may be valuable if the town is interested in purchasing or trading land for future municipal services or open space. Early ownership studies facilitate many use decisions much later on.

A growing segment of open space land is in private ownership under land trusts and associations. The acreage in land trusts has increased significantly in recent years, particularly in the large organizations such as Nature Conservancy. Small land trusts have also developed in many towns. Planning for future private trust land would be of the greatest benefit if done in coordination with towns planning efforts, especially to achieve the protection of the most critical parcels suitable for preservation and conservation.

The public should be aware of the potential change that could come about in policy concerning the use of state lands. Recently the categories of state-owned lands in parks and forests were changed and defined limits were placed upon the type of activities that could occur within each category. Individual towns should keep abreast of re-evaluations in these state land "use" categories as established by the Department of Environmental Protection. For examole, in the State Plan of Conservation and Development a recommendation is made that water storage reservoirs should be used for water based recreation. If this recommendation is approved, it will affect the pattern of traffic and possibly land use within a small town.

Finally, an area of growing concern is the disposition of water company land. Years ago, city or

private water companies purchased land in excess of its needs for water protection. For financial reasons, over the past years water companies have begun to dispose of this excess land. Although given the right to first refusal, most towns when offered are not prepared to purchase these lands. In towns where there are significant water company holdings, there should be an immediate evaluation and, if purchase is envisioned,the town should begin to prepare accordingly.

Next we begin to look at the organization of alternative land use within the town. It is important to know where the major shopping and business areas are located. Are these uses centralized or dispersed. If shopping and businesses are centralized then we can say we have a business district and a shopping district. We can ask the same question about institutional uses such as fire, police, hospitals, courts, and schools. How about entertainment uses? Are they centralized or dispersed? As we begin to look more closely at the distribution of land uses, we can begin to evaluate the structure of the town. To begin with, is there a structure, to the community or is there simply a random arrangement of land uses? If there is a structure, is it good or bad? Are adjacent land uses compatibly related to one another? For example, after the movie do you enjoy walking through the deserted business district or would you prefer to go through the busy shopping area? Imagine that a shoe factory is the largest employer in the town. It is located a great distance from the town center, preventing its employees from easily obtaining lunch or coffee from the few restaurants in town which could certainly use the business. Now if future industry were to come to town, should they be set out in the "industrial zone" with the shoe factory or should they be incorporated into the town structure to vitalize the economy? For now, its enough to ask the question as a part of our analysis process but at some point a decision will have to be made.

Now, lets look at recreational land uses on a distribution map and ask some basic questions: does it look like there is enough recreational and open space land for your community? Are these areas well distributed? Does everyone have some type of recreation within walking distance of their home? Is there too much of one type of open space, such as too many school playgrounds and not enough green parks? An important consideration might be whether there are links between these open space system where one can flow from one to another without being too encumbered by development. Open space should help to tie pieces together in a soft way, just as roads, our next part of the system, tie things together in a hard way. For a more detailed analysis of open space land uses refer to the Open Space Unit in this kit.

Roads are the dominant element in the hierarchy of the transportation network which provides the necessary links between all of the various land uses. We must remember, however, that transportation is a land use itself. It should be looked at in the same way as we have looked at the other uses- with a critical eye. It is not enough to map out and acknowledge existing patterns. We must measure the condition today in order to improve our planning for the future.

While tax and regulatory policies may have significant effects on broad development patterns, the funding of new public facilities probably has the most direct and immediate impact on specific land areas. The influence of highways on land values and development decisions is understood best.

The development of transportation meets needs and fosters development. Communities are linked by roads, airports and railroad lines, and that linkage itself leads to development of the land. As land is made accessible, it is made economically attractive. Different means of transportation, in turn, lead to different patterns of growth. Originally, steamboat and canal transportation opened river valleys. In the mid-1800's, railroads made their appearance. By the end of the 19th century, railroads were the chief means of passenger and freight transportation. Development followed the railroad lines. After World War II, the public turned to the automobile and truck, bringing with them new patterns of land use along the interstate highways and particularly around the interchanges.

The major public investment program in terms of growth-inducing effects is the Federal Highway Program. Of course, the direct environmental impact of highway construction is also substantial. Each mile of interstate highway consumes up to 48 acres; over two-thirds of the land area in some of our cities is consumed by streets, roads, and parking. The earth moving required in the construction of such systems is a major source of soil erosion and increased sediment loads in rivers and streams. The paved area results in increased stormwater runoff,which can be heavily polluted with organic materials, oil, nutrients, and toxic substances. Air pollution, noise, community disruption, and the loss of parks, natural areas, and structures of architectural or historic significance are other direct effects of highway construction. But the effects on urban development patterns have been even greater. Cheap energy, the automobile, and the highway have been major factors in determining the physical character of American Metropolitan areas.

A major highway linking a satellite city to a nearby major metropolitan area may induce a higher growth rate for the satellite city and for the corridor between it and the metropolitan area.

Manufacturers consider highway transportation to be an important factor in their location decisions, once they have decided upon a region. Other factors such as availability of raw materials, the existence of markets, and supplies of adequately skilled labor have more influence in the choice of region, but highways become important in the site location decision within a given region.

Commercial facilities, particularly those involved in wholesale and retail trade, show even greater sensitivity to the presence of highways in location decisions. Over the past two to three decades, wholesale trade has migrated steadily and significantly to suburban locations near highway interchanges.

Retail trade may have an even stronger attraction to highways. Many of our modern regional shopping centers would not be financially feasible were it not for their ability to locate near the intersection of major highways. In addition, certain categories of retail businesses-service stations, Motels, restaurantss, and drive-in establishments-are very strongly oriented toward highways.

central business districts appear to have been hurt by improvements in the highway network of most metropolitan centers.

Case studies show that highways introduce pressures for commercial development of nearby land. Arterial streets and radial highways tend to promote strip commercial development, while circumferential highways tend to promote large-scale commercial, industrial, and residential developments. Circumferential highways may also lead to accelerated commercial development along major arterials intersecting them. Such interchanges provide the strongest stimulant for rapid land use changes, particularly into very high density development.

The impact of highways on residential location depends to a great extent upon the relative supply and demand for different types of housing, and the availability of accessible vacant land. Land especially close to the city and near an interchange will increase substantially in price and often can only be economically developed in an intensive way either with businesses or high density housing. Farther out at the urban fringe, where farmland is available for development, radial highways from the beltway promote conversion to low density single family subdivisions.

In summary, under some conditions highways can affect how and where development occurs, and the possible impacts should be carefully considered in planning and reviewing proposed new projects. Some of the social and economic impacts of highways are listed on guide sheet #6. Stop the recorder while you review the guide sheet. (Pause).

Automobiles, our primary source of mobility, and roads as their conduits, have made profound changes in the landscape. The first priority in planning and design for many years has been, circulation. Roads were worked out and slapped down before any consideration of housing, pedestrian movement or open space. Today, many planners are re-evaluating that approach and moving towards a people-comfort oriented approach. And it is with this spirit of change that we evaluate our existing transportation networks, acknowledging that they were often founded upon misdirected attitude.

Our conceptions of transportation have been expanded. Beyond the road systems, which include unpaved gravel ones up through the divided super-highways, we now consider pedestrian, bicycle and even equestrian systems of the utmost importance. If we begin to make a seperate map of transportation systems, using different colors to indicate alternative modes, the shortcomings of the network, if there are any, become readily apparent. Conflicts and congested areas can be easily seen. Consider the transportation users and ask: Are there areas where people can walk or ride bicycles without the constant fear of being run down? Are there places away from the road where only pedestrians and joggers can go? In other words, is there an adequate separation of motorized movement from other forms of transportation? It is also critical to ask, if this separation movement is important to your town. In some towns it might not be. Each community will have its own priorities.

In an age of limited energy supplies, mass transportation systems have become increasingly more important. Buses, trains and subways certainly need to be examined for their efficacy, though primarily in urban areas. Buses, the more universal of the mass transit modes, should be looked at in terms of their coverage. Do they service the intensive use areas and the primary residential centers? Is there one segment of the population that is better serviced than others? Are there sufficient bus stops to prevent people from walking unreasonable distances?

Some areas may have more unique or unusual transportation opportunities. Horses, ferry boats, helicopters, monorails-all considered positive alternatives to the automobile - are growing in popularity where possible. If they are being utilized, how do they fit into the network? As their demand increases, is there room for expansion and development of services?

There is evidence that some of the new mass transit facilities being planned or constructed in U.S. cities may stimulate very important growth effects. This is not a new phenomenon. The early growth pattern of many metropolitan areas was established by the trolley lines radiating out from the central business district. Residential development was concentrated in a narrow band along these lines, and its spread was determined by their expansion.

Unfortunately, very little information is available to predict the impacts of more recent mass transit systems. Few facilities have been constructed in recent years, and their impacts have been very difficult to separate from the many other factors influencing urban growth.

Like transportation systems, the various utility systems; sewer, water, power, solid waste, are both land uses themselves, and systems. As land uses, they have direct environmental, social and economic impacts, and certain requirements in terms of the nature of the land required for use. As systems, they can effect the development of other land uses, or conversely can be affected by land use change.

Consider your community's water supply system. What areas utilize their own on-site sources, wells and springs, and what areas are served by a public distribution system? You'll probably discover that the most densely populated areas are served by the public water supply system, while the outlying areas have on-site supplies or wells.Densely populated areas requre water supply from a water supply stystem. Therefore extension of service can help to direct and encourage development. Towns should be very aware of this relationship.

The sources of this water are land-uses in themselves - Dams, treatment plants, pumping stations, pipelines, and watershed areas. Utility owned watershed areas can be particularly significant in terms of open space. Many water utilities protect the quality of their supplies by keeping areas surrounding their reservoirs in open space. The more of the tributary watershed protected, the less chance of pollution and the lower the cost of treatment before distribution. However, this relationship is changing with requirement by the health department that all water be treated.

Sewage disposal systems have certain requirements for land and certain environmental impacts. Individual septic systems can serve low density development, if the soil and water conditions are suitable. But with the wrong conditions or high densities, pollution of surface and ground water can result. Sewer systems can move the problem elsewhere, to the central treatment plant or receiving stream. There, the degree of treatment and assimilative capacity of the stream will determine the ultimate impacts.

Sewer lines themselves may be under ground and out of sight, but they too are a land use with environmental impact. Older systems often leak, causing pollution of ground water. Installation of new systems can cause disruption during the construction process. Since flow of sewage by gravity saves pumping costs, sewer lines are often installed following stream courses, a sure downhill path. Construction activities in this process can severely disrupt the natural state of the stream and produce severe sediment problems.

Like transportation systems, sewer service can be used to some extent to direct and control development. If an area has soils that prevent use of septic systems, sewers will open that area for development. If an area is to be kept at low density development, with-holding sewer service from that area could be part of your planning scheme.

But the process can often work the other way around as well. Development with septic systems at a density too high for the soils and water conditions, can lead to problems that will then necessitate extension of sewer service, at unexpected cost.

Even in an area with sewers, if development outstrips the capacity of the treatment plant, added pollution can result. Some towns have been required by water pollution regulations to permit no further sewer connections until they have upgraded their plant to take the added flow.

Sewers and sewage treatment plants are replacing highways as prime determinants of the location of development, in part because most of the major interstate highways segments located on the urban fringe have been built and additional highways have only marginal effects on access. This replacement has also occurred because new concerns over water pollution have made it costly and sometimes impossible to build adequate septic tank systems and very difficult to receive approval to tie into existing overloaded sewage systems. And in part the replacement has taken place because new legislation makes billions of dollars in Federal aid available each year to communities to build new sewers and treatment facitities.

The location and rate of extension of interceptor sewer lines through previously undeveloped areas seem to have more impact on land use than any other set of decisions on wastewater facilities. Interceptor sewers are defined as the major lines that run from the collector sewers to the treatment plant. Because the location of a new interceptor significantly increases the number of buildable lots along its right of way, a key issue is its capacity. There is a general tendency for such lines to be oversized in order to assure the necessary capacity for future development, but the oversizing itself can contribute to the extent of development that occurs. Such oversizing thus becomes a

A related land use impact caused by large interceptor sewers is their tendency to be designed to run for long distances between existing towns before reaching the treatment plant. Such lines open up large areas of what may have been previously undeveloped land between the towns. While this may be in line with overall regional land use planning, it could also run counter to desirable development patterns, particularly if sewers are placed only with an eye toward wastewater treatment efficiency. In one recent case, a proposed interceptor was slated to run through a large undeveloped coastal area of Delaware that was on the state plan for eventual purchase as recreational land. The proposal would have used public funds to build a sewer that would have substantially raised the purchase cost of the land to the public.

Another phenomenon related to the construction of large interceptors is the tendencey for developers to move immediately to the end of the new line in order to take advantage of both the available sewer service and the low land costs on the far urban fringe. The result is a costly leapfrog and fill-in development pattern, which increases the difficulty of properly planning the timing and size of other public facilities and spreads the urban area out in a pattern that is wasteful of land and energy resources.

Many of these problems could be avoided if the construction of a major interceptor sewers were phased to the extent feasible to coordinate with the extension of other public facilities in accord with a comprehensive land use plan. While annual or ~~biennial~~ biannual extensions of such interceptors might make the sewer cost somewhat higher and the funding mechanism more complicated, it would probably result in overall cost savings to the community and would significantly reduce adverse land use impacts

Obviously sewage lines are not the only determinents of growth patterns. If no one wants to build a shopping center at a particular site, the existence of a sewage line is not going to make any difference. In addition many other factors, such as roads or visual setting, must be considered. But if the only reason that a shopping center is not constructed on the site is because the shopping center would generate too much sewage for the natural capacity of the soil to absorb, then a decision to provide the site with sewage and water service can have a critical impact.

If sewer and water lines are not available, then the economics of land use are in part determined by the natural capacity of the soil to absorb sewage. When sewer and water lines are available, the economics of land use change. Guide sheet #7 summarizes the results of a Michigan study of the effects on development of introducing a interceptor sewer in a lakefront community. Stop the recorder while you read the results of the study (Pause).

Sewage collection and treatment systems bypass natural constraints on growth. In the absence of natural constraints, orderly growth requires public development guidelines. When soil type, slope, or other natural conditions are no longer of significant influence, the capacity of the treatment system and community regulations become critical in influencing the patterns of growth.

If municipal services, such as sewer collector lines, are extended as part of a comprehensive

community growth plan, then many of the potential problems, which guide sheet #7 has summarized, can be avoided or, at least, minimized.

Efforts to correct water pollution by providing municipal sewage treatment could lead to serious community problems unless certain precautions are taken. So long as the provision of municipal sewer service is treated strictly as a technical matter, divorced from the social and economic concerns of comprehensive community planning, it is possible that problems will result.

The comprehensive community plan should serve as a guide for the extension of any public service - not just sewers. The design and location of water lines and roads are also municipal decisions that have an impact upon the patterns of community development, and they should be guided by the total plan. In ~~shoreline~~ areas where intensive development pressures exist and where natural and social systems tend to be especially fragile, it is essential that community planning guide service extension decisions.

Guide sheets #8 to #11 are an illustration of the correlation between highways, sewers, mass transit and urban growth. The example is selected from maps of the Regional Planning Agency of South Central Connecticut. Overlay guide sheet #8 or #9 or #10 or guidesheet #11. Rewind the cassette tape to the beginning of our discussion on highways. As you replay that section, combine the maps to illustrate the discussion. Stop the recorder and rewind.

The relationship between energy and land use has dual meaning. Because of present land use patterns and transportation systems, certain levels of energy consumption are required for operation of urban systems and facilities. Alternatively, it might also be suggested that because of the changes in future sources and uses of energy, changes in land use patterns and transportation will result. The purpose of this section is to discuss The relationship between energy and land use, to present possible variations in energy consumption that are likely with alternative forms of development and to speculate on what constitutes an energy-efficient land use pattern.

Guide sheet #12 illustrates some basic considerations of energy conservation today. Stop the recorder while you refresh your memory on the elements of energy conservation.

One approach to examining the energy consumption of alternative development patterns is to take the same increments of growth from the present base and arrange the land uses, economic activities, and levels of transportation in various useful ways. The following analysis was The analysis presented was developed by James S. Roberts for The Metropolitan Washington, D.C. Council of Governments. Based on the five scenario's listed on the left side of guidesheet #13, energy consumption was calculated for each case. Which scenario is the most energy efficient? Stop the recorder while you examine the scenarios and the related energy use by sector. (Pause)

Energy relates to land use in several ways, as follows:

There are possiblities for savings in energy consumption by land use means in construction projects or where capital investment is required. If more compact development occurs, there are potential savings in materials, in installation, and in construction.

Similarly, with more compact and contiguous development, there are potential savings in operating and maintenance requirements for energy. Withe shorter distances and more efficient coverage of an area, for instance,police and fire patrols, school bus routes, and other urban services can be provided with less energy. Then provision of private goods and services, such as service or delivery calls, can be less consuming, as well.

These areas for potential savings assume two features of future development - use of clustering techniques with somewhat higher densities for shorter distances, and elimination of leapfrog development in order to limit the amount of extraneous travel as well.

Further savings will result if land uses are organized in such a manner that fewer trips are required and if a number of land uses are related, so that multi-purpose trips are possible. If major centers of activity - for employment,shopping, and education - are located at the junction of public transit systems, then more efficient use of both land and transportation is possible.

Another way in which land use relates to energy use, particularly at higher densities, is that some technologies become available that would not be possible if land uses were not organized in a certain manner. Obviously, without certain threshold densities public transportation would not be feasible - whether bus or fixed-rail systems. In addition, the use of total energy systems, where ther waste heat from combustion for heating is captured and used, is limited to certain sizes and groupings of structures. If the capability to use solid waste materials as a fuel source in the total energy system is added, then requisite densities become even more important.

In summary, the attributes of an energy-efficient land use pattern seem to include the following: development at somewhat higher densities, with clustering techniques as well as use of natural amenities on the site to reduce heating, cooling, and lighting loads; contiguous development with no leapfrogging; orientation to public transportation and reduced more efficient use of the automobile; use of certain technical options that require some reorganization of present land use patterns in order to be implemented; and general relationships among land uses that will result in less travel, less material requirements, and less land and structural area per dwelling unit.

There is one other important aspect to analysis and planning that is part of our cultural system. It actually is a category all by itself yet it overlaps with all of the analysis components that we have discussed thus far. The last area is visual analysis. It is a crucial analysis step that falls somewhere between population studies, since people are the viewers, and land use studies since it is the land uses that are perceived. Visual analysis involves subjective and quantitative components. A few considerations of harmonizing land uses with the landscape are presented on guide sheet #14. Review the guide sheet before proceeding further. (Pause)

A visual analysis begins with a casual survey of the landscape. Many people look at a structure

or scene and decide immediately if they like it or dislike it. However, there are lots of things to consider when examing the aesthetic elements of a community. Guide sheet #15 contains one rating scale that may be helpful to you as you evaluate various scenes from local communities. Obtain a map or plan of your town. On the map, town plan, or area map, we can begin to record information of the scenic quality. Turn to guide sheet #16. Follow along on guide sheet #16, as we discuss the analysis of scenic quality.

~~The~~ A landscape of varied topography will accept and absorb significantly more development with minimal apparent visual change. ~~The~~ A landscape that is flat, open and extensive inevitably changes with every new development. The relative proportion of the landscape that is visible and thus subject to change is large. In all cases the foreground is the most critical zone. Any construction in this road edge area tends to be visible, and, if divergent from the normative character, intrusive unless adequately buffered. Also, foreground clutter can block a significant focal or panoramic view. Middle distance clutter must be rather extensive to intrude; offensive far distant changes must be of the magnitude of an interstate highway or high tension wires to be a significant intrusion.

Within each town the scenic roads of unusual distinction can be identified. Scenic roads ~~were~~ are those that ~~were~~ are consistently pleasing and possessed outstanding focal or panoramic interest, undisturbed by degrading sights. Typically scenic roads ~~were~~ are located along ridge lines which provide focal attractions and distant views or along wide valley bottom lands where agricultural activity predominates.

Because visual boundaries are often extensive, controls that will preserve scenic roads and panoramic views are difficult to establish and enforce. A scenic road may have a combination of focal views and sweeping panoramic views. The nearby, or foreground, view is the zone most sensitive to disruption and a single building can effectively block a significant long range view. A visual easement preventing building at such a critical site may preserve a view. In the middle and distant sectors of a scenic view, controls should be tailored to the specific view. Given the endless scenic variety exposed by each important view, preservation of a scenic road will require careful evaluation and perhaps even an individual approach in some situations.

Traditionally, towns concentrate conservation and open space programs on the preservation of large undeveloped parcels, secured either through public purchase or inclusion in a private land trust. Considering the large areas of existing open space in some of the region's towns (for example, approximately one-fifth of Cornwall's land is in State ownership), it is recommended that special emphasis be directed toward preserving existing high quality scenic views and roads especially through the use of such techniques as conservation or scenic easements and purchase and development rights. The impact of a scenic overlook preserved for future generations may well add more to a town's open space character than will the purchase of large acreage.

Another form of visual analysis is a survey of the band of land along transportation corridors-or the cultural edge. Turn to guide sheet #17 as we discuss the cultural edge survey.

A town's road network plays a significant role in shaping its image. Land that is not within 500 to 1,000 feet of a road is generally not likely to be immediately developed, especially in a rural area where growth occurs gradually or on an individual lot basis along an existing road rather than in a large subdivision served by a new road.

The sultural edge survey evaluates a 1,000 foot "development" band on each side of existing roads. This band of land is evaluated and rated according to its cultural quality. The term "cultural" is used to distinguish the activities of man from those considered part of the undisturbed natural setting. The road and all development and change along it are the product of man's activity, and it is the view from the town's roads that creates the image of the town.

The process used in the determination of a Cultural Edge rating is based on the premise that for every town there is a characteristic relationship of vegetation, open land, and development. This characteristic landscape is considered average or normative, and distinctive and disruptive areas are rated above and below the norm.

It is suggested that individual towns consider taking steps that will conserve the sites identified as above average and distinctive. Each town should review and evaluate these and any others worthy of protection. Again, the use of scenic easements and selected land purchase can succeed in maintaining these special culturally significant areas.

If teh image of a rural town is to be retained in its present form, it is also worthwhile to evaluate how new individual lots and homes will fit into the landscape along a road. New houses are sited either within full view of the road- (the suburban model or behind a vegetative buffer, a rural model. If the rural model is desired then all new residential construction be required to conform to certain performance standards that insure the retention of rural roadside vegetation. This would allow the individual the latitude as to size, style, and position that is traditionally his right, but also insures retention of the rural imagery so appreciated.

Another suggestion concerns the traditional practice of permitting numerous small lots along state highways. Over time, this practice will have the result of reducing the traffic carrying capacity of the road causing it to be widened or even replaced. For immediate safety reasons and in the long run to preserve scenic quality, individual lot development along state reads should occur at a depth from the road and the driveway intersection should be located widely separated from sharp curves, hills and heighboring driveways. Also, on a new road rather than along state road frontage. Preserving traffic volume capacity of the state roads will produce long range scenic and safety benefits for the town.

The components of this "cultural" or "man-made" ecosystem have been established. The system is a working, inter-dependent one.

Continuing with our original ecosystem analogy, we realize that your town is a small part of an even larger, more complex system. Just as we have analyzed the components that make up our small town system, we find that our town is a component that can be analyzed within the larger system. ~~and how it effects or is effected by that system.~~

The first task is to determine the boundaries of the larger system though finite boundaries are not essential in all cases. In some towns the watershed limits might be sufficient if it is a well-isolated community. In other cases however it might not be possible to make a map of the system because the potential pressures might be from hundreds of miles away. A road map of your part of the U.S. might have to serve as the context. For example, small towns in potential resort/recreation areas certainly fall into this category. A town in the Adirondacks of N.Y. might have to evaluate its location in relation to N.Y. City, Boston, Montreal and Syracuse. Arietta, N.Y. is just such a town. With skiing opportunities in the winter and a lake for summer recreation activities, the town is faced with tremendous development pressures by recreation seekers from all of the major population centers just mentioned. The once industry oriented economy of the town is now thriving essentially on resort monies. This situation often places the town in a double bind; they are dependent upon the tourist economy for survival yet they want to avoid being inundated by the tourist industry with its associated sprawl and visual blight. Thus it is important for towns like Arietta, to forsee these possible dilemmas by doing some early planning and analyzing their regional context.

They should begin to ask: How do we fit into this larger system; what role do we play? Are we a unique resource that will draw other communities to us, ~~or do we have unique resources that will draw other communities to~~ us, or do we have unique resources that will draw only certain elements of the population to us as in the recreation example. Or, our town might by on the path from a major city to an important recreation area. This certainly would have significant ramifications on the town. Specific kinds of development might occur, such as strip/roadside services. The roads might be widened and improved, or perhaps a super-highway might be built, by-passing the town altogether.

A town should approach this "context" analysis just as it would its own land use analysis. The very same parts and issues should be looked at. What are the ownership patterns around the town? Is the town surrounded by national forests thereby alleviating development threats or is there a major piece of land held by a lumber company or once-thriving industry that might sell out to a condominium developer.

Therefore look at the neighboring land uses as an indicator of future trends. Are you in a

growing suburban community or in a declining urban one?

Open space is not only important within a town, but around a town as well. Are there regional recreation facilities available to the town such as large parks, camping sites, reservoirs, or nature areas? Is there a regional open space system that the town plugs into?

Transportation is a very importatnt link with the larger, regional context. Can people get to you and can you get to other people? Are there people getting to you who you don't want, as in the case of a town on the path to a resort area? Suburban areas might want to evaluate their mass transit links with their neighboring urban center.

Utilities and public facilities have regional implications as well. Power line rights-of-way are often sensitive issues for towns. Are there plans for one to be coming in or if there is one already, what can be done with it? Many towns have begun to use these rights of way as ski mobile tracks, bicycle paths or simply as a linear open space corridor. Waste management and water quality are certainly regional issues. Duplication and waste of energy can be avoided if towns cooperate with one anotherat solving solid waste disposal problems. Or, is your adjacent town building an incinerator or a landfill right next to a parcel of land that you zoned for housing or recreation. Perhaps a community upstream does not have adequate sewage treatment facilities and is pumping their effluent into the river as you are beginning to develop new waterfront recreation facilities. Conflicts like these can be avoided and resolved if towns would begin to view themselves as an inter-dependent component of a larger, complex ecosystem. Planning in a vacuum is selfish, narrow and counter-productive to the common good.

Population studies,as discussed in the Planning for People Unit, are early studies undertaken in a planning effort for a town. These studies must also be performed to complete any regional context analysis. Population trends hold many clues for responsible planning decisions. The first question is whether the population of the region is increasing or decreasing and why? In either case, what are the immediate implications for your town? If the population is increasing, are people moving to certain areas within the region? What kinds of people are moving in and what are their needs? Are they young people seeking second homes or older, retired people looking for a permanent place to live? The answer to these questions provide insight into the services that will be necessary and the demands that will be placed on roads, recreation areas, water supplies, etc.

With these population studies, the context analysis is essentially complete. A lucid picture of the dynamics of the region should be painted and the role that the small community plays in it should be apparent. If a town is capable of grasping this information it should be able to respond creatively and positively to the trends and pressures exerted on it by the regional ecosytems.

Each town has its own unique approach to the process of land use planning and decison making. Guide sheet #18 is a flow chart of the planning process from ~~Utah~~ Idaho. Compare this to guidesheet #19. Guide sheet #19 is a flow chant of the planning process of Arietta, New York. While each process is unique, both involve many of the issues raised in The Land Use Decision Making Kit. Obtain a flow chart of the planning process in your town. Are there steps in the Arietta or ~~Utah~~ Idaho processes not included in your towns?